Among the papers of special interest are those by J. Scott Keltie on "Stanley and the Map of Africa;" the "Age of Bronze in Egypt," by Oscar Montélius; the "Primitive Home of the Aryans," by A. H. Sayce; a "Primitive Urn Burial," by J. F. Synder; "Criminal Anthropology," by Thomas Wilson; "Antarctic Exploration," by G. S. Griffiths; "The History of the Niagara River," by G. K. Gilbert; and Weismann's "Theory of Heredity." The recently published translation of Professor Weismann's essays on heredity and allied topics has aroused the interest of the general public in the system of his biological ideas. Mr. George J. Romanes has undertaken a difficult task in endeavoring to present Professor Weismann's different theories on the subject, in a condensed form, but he has succeeded admirably. The papers on "The Ascent of Man," by Frank Baker, "The Antiquity of Man," by John Evans, and "The Progress of Anthropology" in 1890, by Professor Otis T. Mason, are of great value to those interested in the science of anthropology. The ancient problem of the squaring of the circle, which trained and untrained minds have striven in vain to solve for two and a half thousand years, is ably discussed in a paper by Hermann Schubert He makes an historical sketch of the problem from the earliest times to the present day, tracing the various theories from the times of pre-Grecian antiquity to the verdict given by Professor Lindemann of Königsberg in June, 1882: "It is impossible with ruler and compasses to construct a square equal in area to a given circle." These are the words of the final determination of a controversy which is as old as the history of the human mind. But the race of circle-squarers, unmindful of the verdict of mathematics, that most infallible of arbiters, will never die out so long as ignorance and the thirst for glory shall be united.

"The Progress of Astronomy" during 1889 is clearly shown in the paper by William C. Winlock, the compiler having made free use of reviews, in the various branches of astronomy, contributed by specialists to the *Athenæum*, *Nature*, *Journal of the Astronomical Society of the Pacific*, the *Observatory*, *Bulletin Astronomique*, the *Astronomical Journal*, and other periodicals. Among these are articles on stellar parallax, comets, meteors, variable and colored stars, stellar spectra, astronomical photography, the planets, solar spectrum, the sun, the solar system, and the minor planets. Astronomical bibliography for 1889 is given at the conclusion of this paper including the most important books and articles for that year, which have attracted the compiler's notice; some few titles having been taken from reviews and catalogues, where the publications themselves have not been accessible. The title of the paper by Robert Simpson Woodward on "The Mathematical Theories of the Earth" implies a community of interest amongst astronomers and mathematicians. In fact, the study of the earth's crust, considered in its entirety and in its relations to similar bodies of the universe, has long been the special province of astronomers and mathematicians. Since the times of Galileo, Kepler, and Copernicus, it has supplied a perennial stimulus to observation and investigation, and it promises to tax the resources of the ablest observers and analysts for some centuries to come. The structure of the earth, as a mechanical and physical question, is closely connected with the origin and formation of its satellite and of the planets and satellites belonging to the same solar system. A paper "On the Physical Structure of the Earth," by Henry Hennessy, treats of this subject, under the following headings: "the mechanical and physical properties of the matter composing the earth, the rotation of the earth considered as partly fluid and partly solid," and a note concerning "the annual recession calculated on the hypothesis of the earth's solidity." The papers on "Glacial Geology," by Professor James Geikie; "The Mediterranean, Physical and Historical," by Sir R. Lambert Playfair; and the "History of Geodetic Operations in Russia," by Colonel B. Witshowski of the General Staff, and Professor J. Howard Gore, are full of interest.

The paper on "The Physical Basis of Musical Harmony," by Professor Sylvanus P. Thompson, is a history of the researches of Dr. R. Koenig, who is known not only as the constructor of the

Publications Received at Editor's Office.

BONNEY, G. E. Induction Coils. New York, Macmillan & Co. 12°. 231 p. Illustrated. $1.

COMMISSIONERS OF FISHERIES of the State of New York. Twentieth Annual Report, 1892. Albany, State Printer. 8°. 346 p.

DAY, DAVID T. Mineral Resources of the United States. Washington, Government. 8°. 679 p.

DOUGHTY, FRANCIS W. Evidences of Man in the Drift. New York. 8°. Paper. 18 p.

GRAFF, LUDWIG VON. Bibliothek des Professors der Zoologie und vergl. Anatomie. Leipzig, Wilhelm Engelnann. 8°. Paper. 353 p.

IMPERIAL UNIVERSITY OF JAPAN. Calendar for the Year 1890-91. Calendar for the Year 1891-92. Tokio, The University. 2 vols. 12°. Paper.

Exchanges.

[Free of charge to all, if of satisfactory character. Address N. D. C. Hodges, 874 Broadway, New York.]

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For Sale.—About 1087 volumes of the private library of Dr. Nicolas León, formerly director of the Museum at Morelia, embracing publications of special value for Mexicologists, like those of Bishop Zumárraga (16th century), of Siguenza y Gongora, of Aleman, etc., the Missal of Spinoza, all very scarce; manuscripts on the history of Michoacán and other Mexican States, on the Tarasco (the Indian language of Michoacán) and several works, of which the only copy known to exist is in this collection. Parties interested in the sale please address DR. NIC. LEÓN, Portal de Matamoras, Morelia, Mexico.

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A JOHNS HOPKINS graduate (1892) desires a position as instructor in mathematics and physics. Address A. B. TURNER, Johns Hopkins University, Baltimore, Md.

finest acoustical instruments in the world, but as an investigator of great originality and distinction, and author of numerous memoirs on acoustics. In his *atelier* on the Quai d'Anjou he lives and works in seclusion, surrounded by his instruments, even as our own Faraday lived and worked amongst his electric and magnetic apparatus. Besides the great tonometer, his colossal masterpiece, Dr. Koenig's collection includes several large wave sirens and innumerable pieces of apparatus in which his ingenious manometric flames are adapted to acoustical investigation. There also stands his tonometric clock, a time-piece governed, not by a pendulum, but by a standard tuning-fork, the rate of vibration of which it accurately records.

The final chapters of the volume deal with "Manners and Customs of the Mohaves," by George A. Allen; "Criminal Anthropology," by Thomas Wilson; "Color Vision and Color Blindness," by R. Brudenell Carter; "Technology and Civilization," by F. Reuleaux; the "Ramsden Dividing Engine," by J. E. Watkins; "Memoir of Elias Loomis," by H. A. Newton; and a memoir of "William Kitchen Parker." The life and work of Elias Loomis form no mean portion of the wealth of Yale University, and he published 164 contributions to astronomy, meteorology, and other branches of scientific research. He was a man possessed of considerable scholarship, of positive convictions, and of a willingness to follow at all hazards wherever truth and duty, as he conceived them, might lead. Professor William Kitchen Parker was born at Dogsthorpe, near Peterborough, June 23, 1823, and died suddenly of syncope of the heart July 3, 1890. He was a fellow of the Royal, Linnean, Zoölogical, and Royal Microscopical Societies; and honorary member of King's College, London, the Philosophical Society of Cambridge, and the Medical Chirurgical Society. He was also a member of the Imperial Society of Naturalists of Moscow, and corresponding member of the Imperial Geological Institute of Vienna and the Academy of Natural Sciences of Philadelphia. In 1885 he received from the Royal College of Physicians the Bayly medal, "*Ob physiologiam feliciter excultam.*" He was "an unworldly seeker after truth, and loved by all who knew him for his uprightness, modesty, unselfishness, and generosity to fellow-workers, always helping young inquirers with specimens and information; he was suddenly lost to sight as a friend and father, but remains in the minds of fellow-workers, of those whom he so freely taught, and of his stricken relatives, as a great and good man, whose beneficent influence will ever be felt in a wide-spreading and advancing science and among thoughtful and appreciative men in all time." MARY PROCTOR.

St. Joseph, Mo., Sept. 9.

Trees of the Northern United States. By AUSTIN C. APGAR. New York, American Book Co. 224 p. 12°. $1.

THE ground covered by this handy volume is the study, description, and determination of the wild and cultivated trees found east of the Rocky Mountains and north of the southern boundaries of Virginia and Missouri. Its author, who is professor of botany in the New Jersey State Normal School, was evidently governed in its preparation by the idea that, while it can hardly be expected that the great majority of people will ever become scientific in any line, it is possible to induce nearly every pupil to become interested in and fully acquainted with such things, for instance, as the trees of his neighborhood. The plan of the work, therefore, is such as to first arouse the pupil's interest in the subject, and then to satisfy the consequent desire for information, attention being mainly directed to the leaves, the wood, the bark, and, in an elementary way, the fruit. These are the parts that must be thoroughly known by all who wish to readily recognize trees, and they, or most of them, may be found and studied throughout the greater part of the year. Though the book may be open to adverse criticism when viewed from the standpoint of the advanced botanists, it should be borne in mind that it is not written for them, but for the average teacher who has had no strictly scientific training. We may add that the illustrations are numerous and well adapted for the purpose in view.

TO THE READERS OF SCIENCE.

PUBLISHER'S ANNOUNCEMENT.

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Jassidæ; Notes on Local.
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Zoology in the Public Schools of Washington, D. C.

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